

What is claimed is:

1. A CMOS image sensor comprising:
a semiconductor structure;
an insulating layer formed on the semiconductor structure, wherein the
5 insulating layer has a trench; and
a convex-shaped color filter pattern formed on the insulating layer and
covering the trench.
2. The CMOS image sensor as recited in claim 1, wherein the
10 semiconductor structure includes a light sensing element and a peripheral circuit.
3. The CMOS image sensor as recited in claim 2, wherein the light
sensing element is a photodiode.
4. The CMOS image sensor as recited in claim 1, wherein the
15 convex-shaped color filter pattern is obtained by coating a dyed photoresist and
carrying out an exposure operation and a development operation.
5. The CMOS image sensor as recited in claim 4, wherein a thermal
20 treatment to the dyed photoresist is further carried out to thereby obtain the
convex-shaped color filter pattern.
6. A method for fabricating a CMOS image sensor, comprising the steps
of:

- a) providing a semiconductor structure;
- b) forming an insulating layer on the semiconductor structure;
- c) selectively etching the insulating layer to form a trench;
- d) coating a dyed photoresist on the insulating layer, wherein the dyed

5 photoresist covers the trench;

e) carrying out an exposure operation and a development operation on the dyed photoresist to thereby obtain a color filter pattern; and

f) performing a thermal treatment, so that the color filter pattern develops a convex shape.

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7. The method as recited in claim 6, wherein the semiconductor structure includes a light sensing element and a peripheral circuit.

8. The method as recited in claim 7, wherein the light sensing element is

15 a photodiode.